



# **Shaping the Department's S&T Strategy**

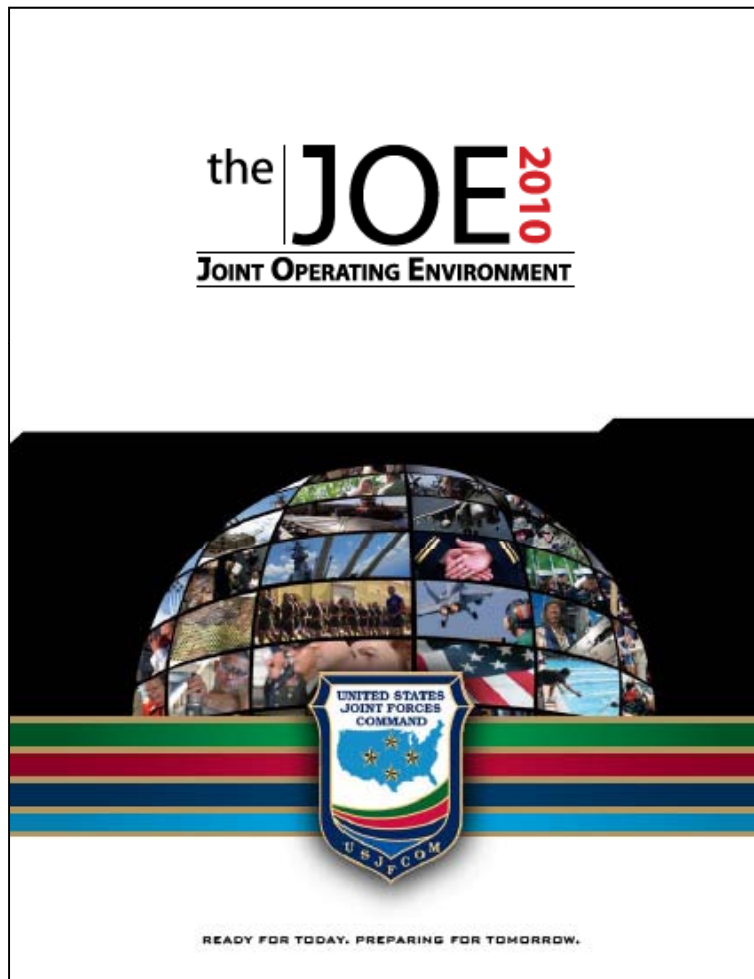
**21 June 2011**

**The Honorable Zachary J. Lemnios  
Assistant Secretary of Defense for  
Research and Engineering**

Report Documentation Page				Form Approved OMB No. 0704-0188	
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1. REPORT DATE <b>21 JUN 2011</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2011 to 00-00-2011</b>	
4. TITLE AND SUBTITLE <b>Shaping the Department's S&amp;T Strategy</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Department of Defense,Assistant Secretary of Defense for Research and Engineering,Washington,DC,20301</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>Presented at the 12th Annual Science &amp; Engineering Technology Conference/DoD TECH Exposition ?Linking the DoD S&amp;T Program to Key Mission Areas?, North Charleston, SC, 21 ? 23 June 2011</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>15</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



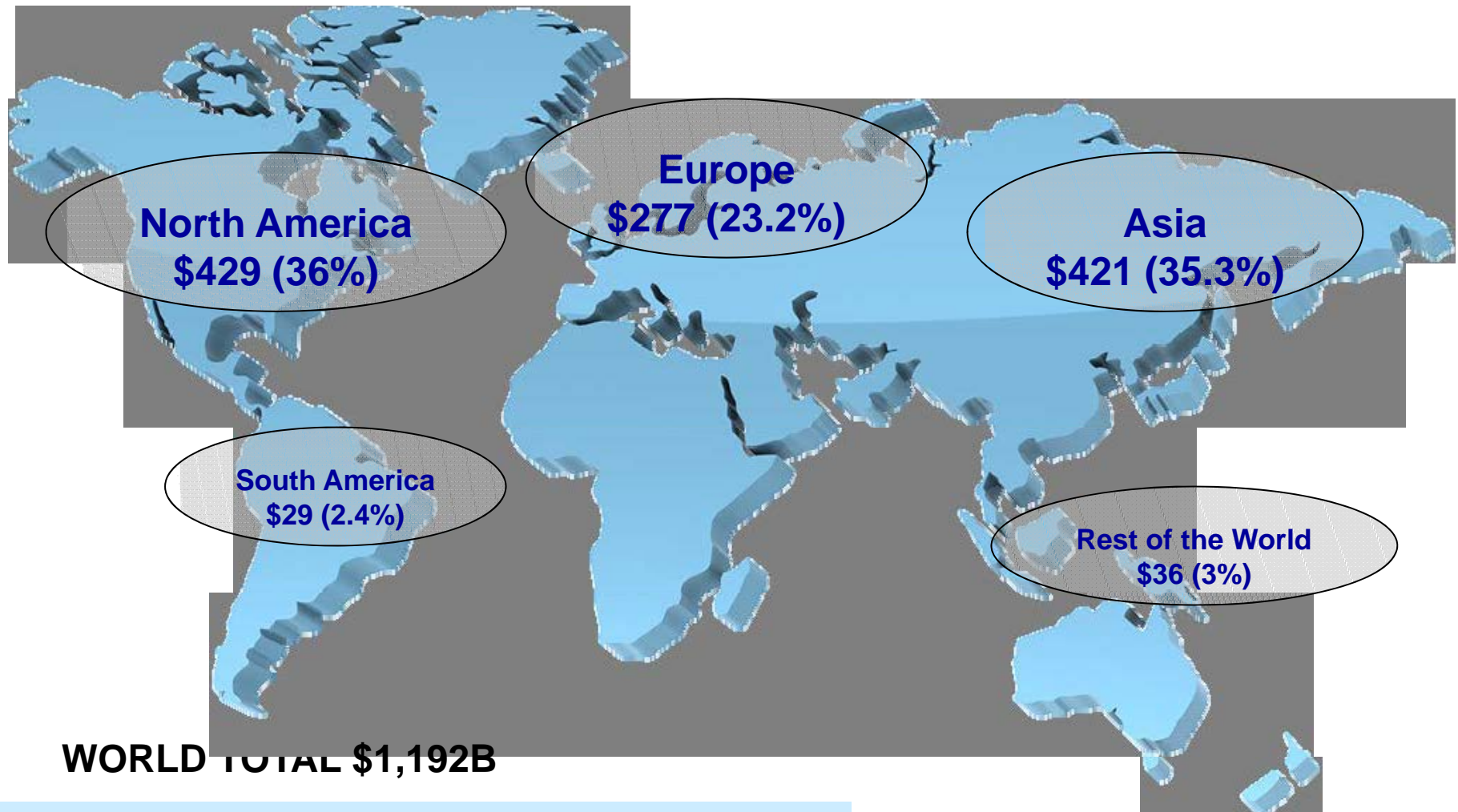
# Global Challenges and Trends



- **Shifting Global Demographics**
- **Globalization shifts**
- **Energy**
- **Climate change & natural disasters**
- **Cyber as a new domain**
- **Challenges to existing state structures**
- **WMD proliferation**



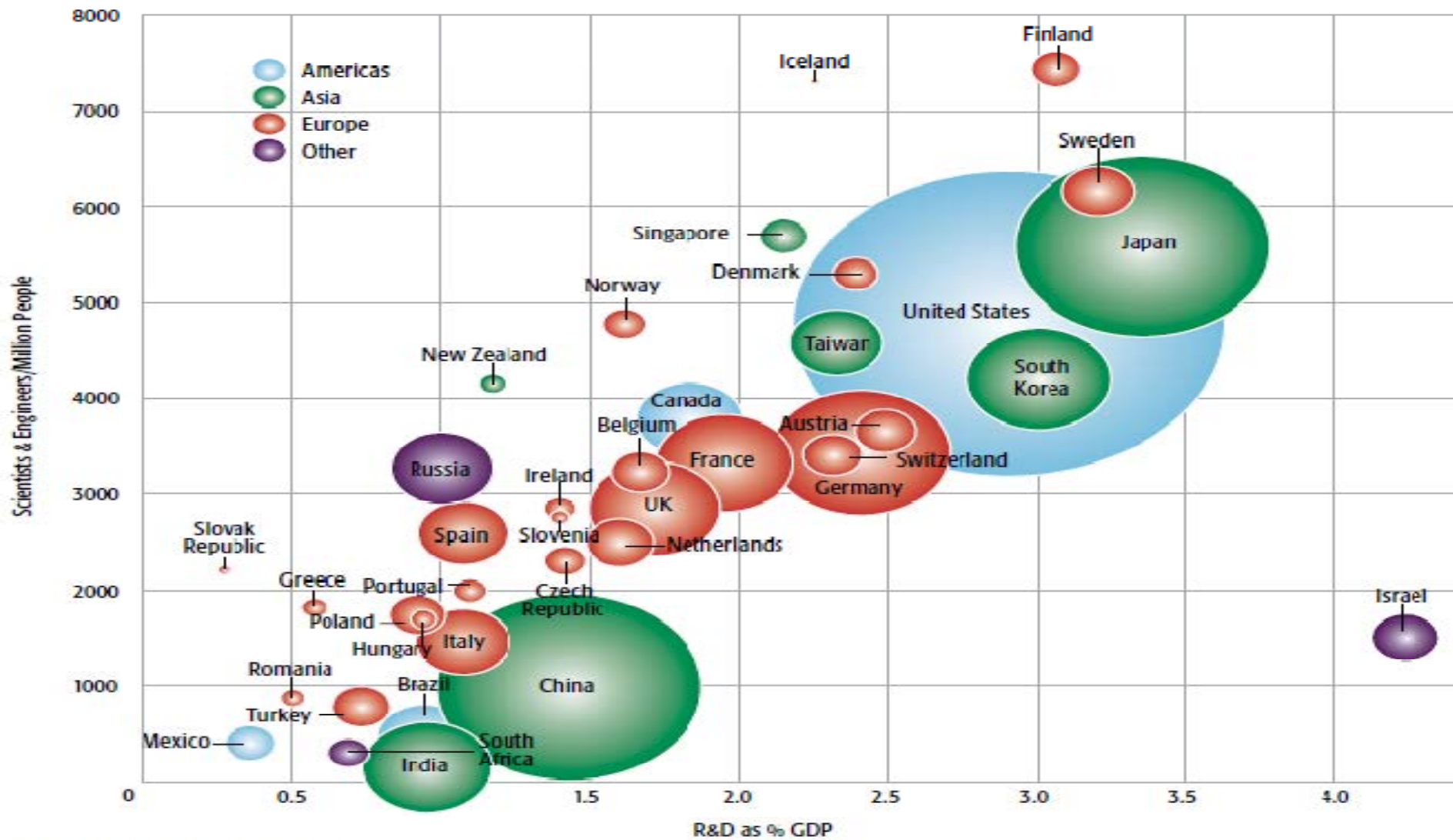
# Globalization of R&D



Source: [www.rdmag.com](http://www.rdmag.com) "2011 Global R&D Funding Forecast" - Battelle



# World R&D Trends: A Global Shift



Source: Battelle, R&D Magazine, OECD, IMF, CIA





# Guidance Roadmap



## Target Affordability and Control Cost Growth

- Mandate affordability as a requirement
  - At Milestone A set affordability target as a Key Performance Parameter

## Improve Tradecraft in Services Acquisition

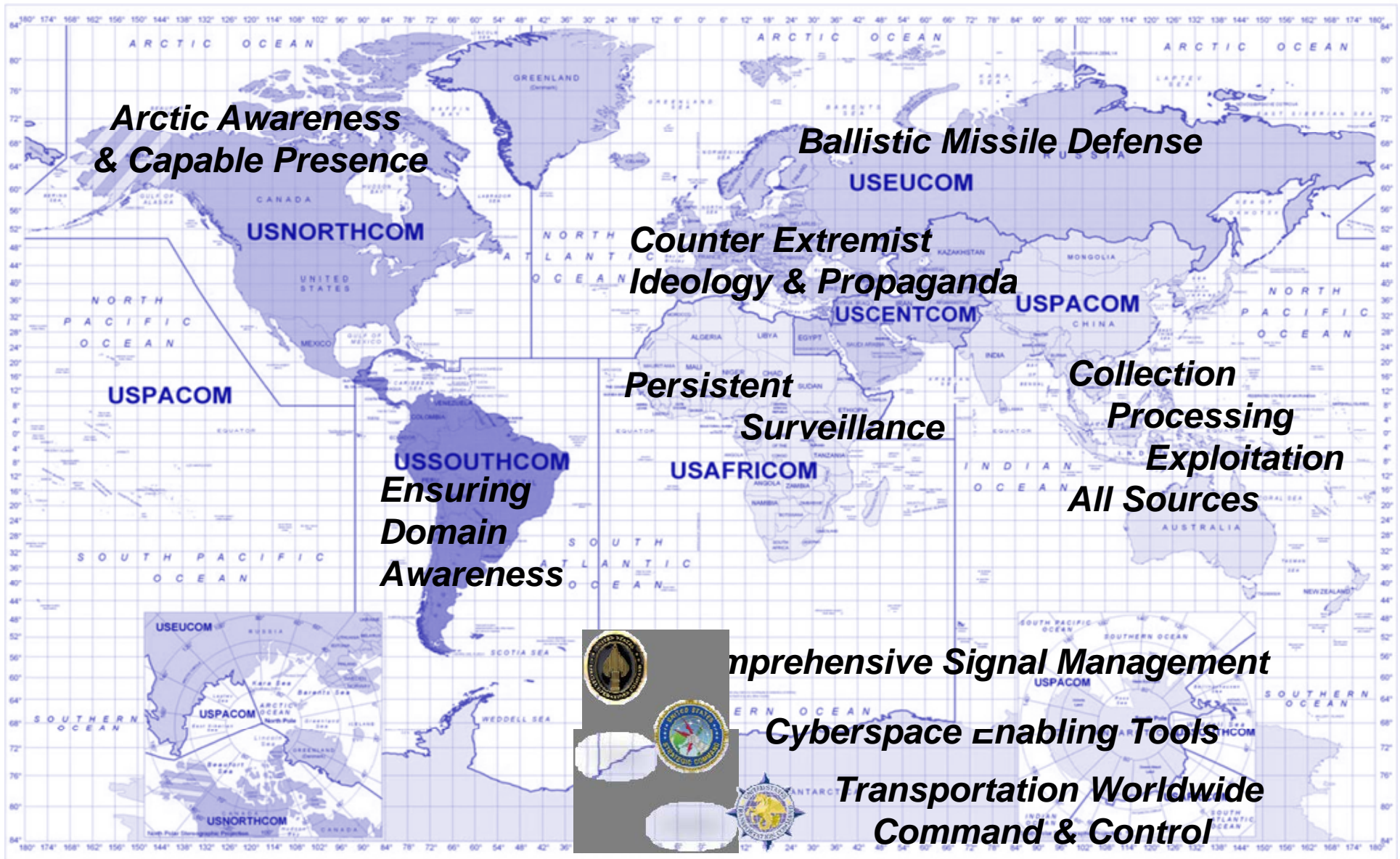
- Create a senior manager for acquisition of services in each component, following the Air Force's example
- Adopt uniform taxonomy for different types of services

- Target Affordability and Control Cost Growth
- Incentivize Productivity & Innovation in Industry
- Promote Real Competition
- Improve Tradecraft in Service Acquisition
- Reduce Non-Productive Processes and Bureaucracy

## Promote

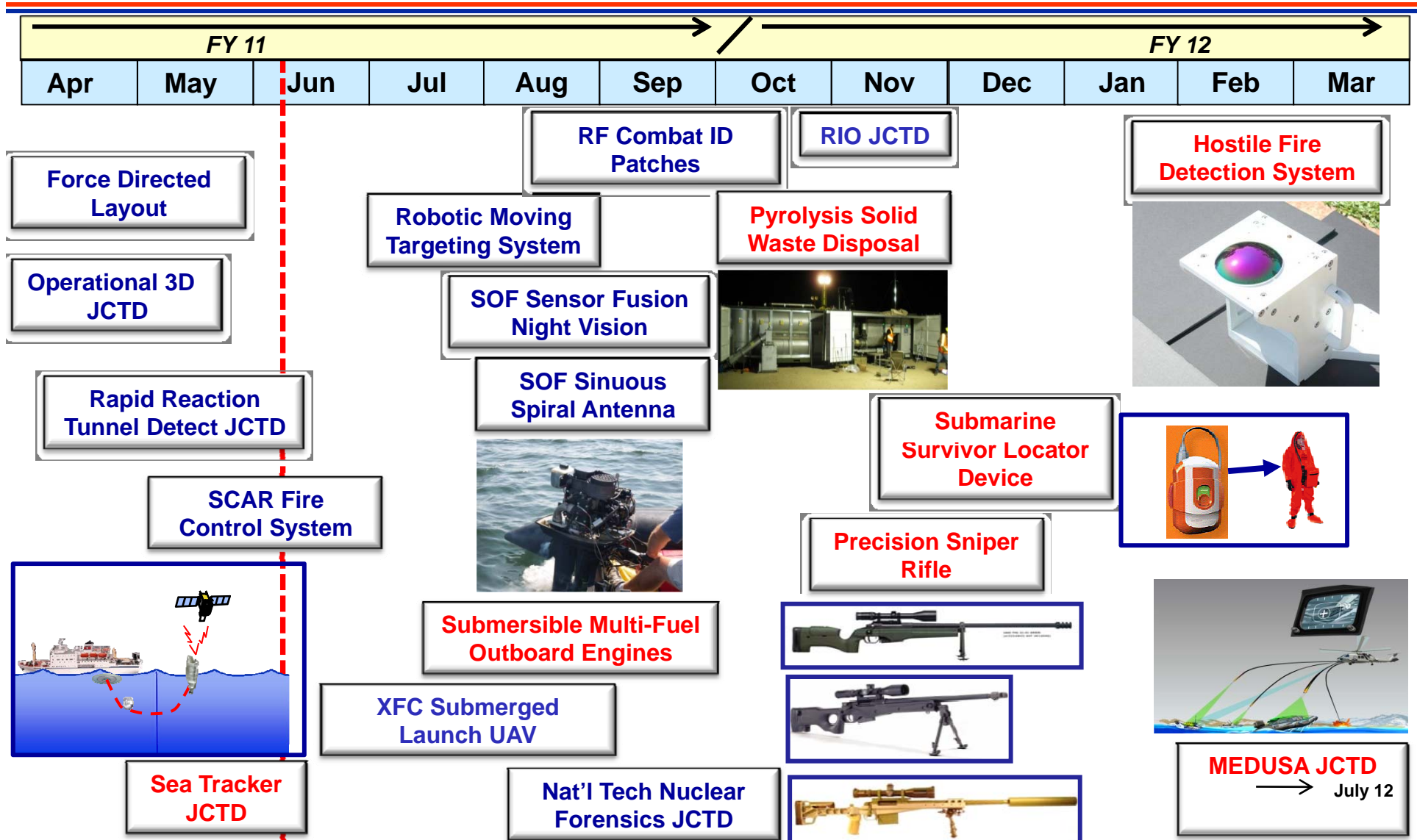
- Require open system architectures and set rules for acquisition of technical data rights
- Increase dynamic small business role in defense marketplace competition

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# Continuing the Push for Capabilities to the Fight







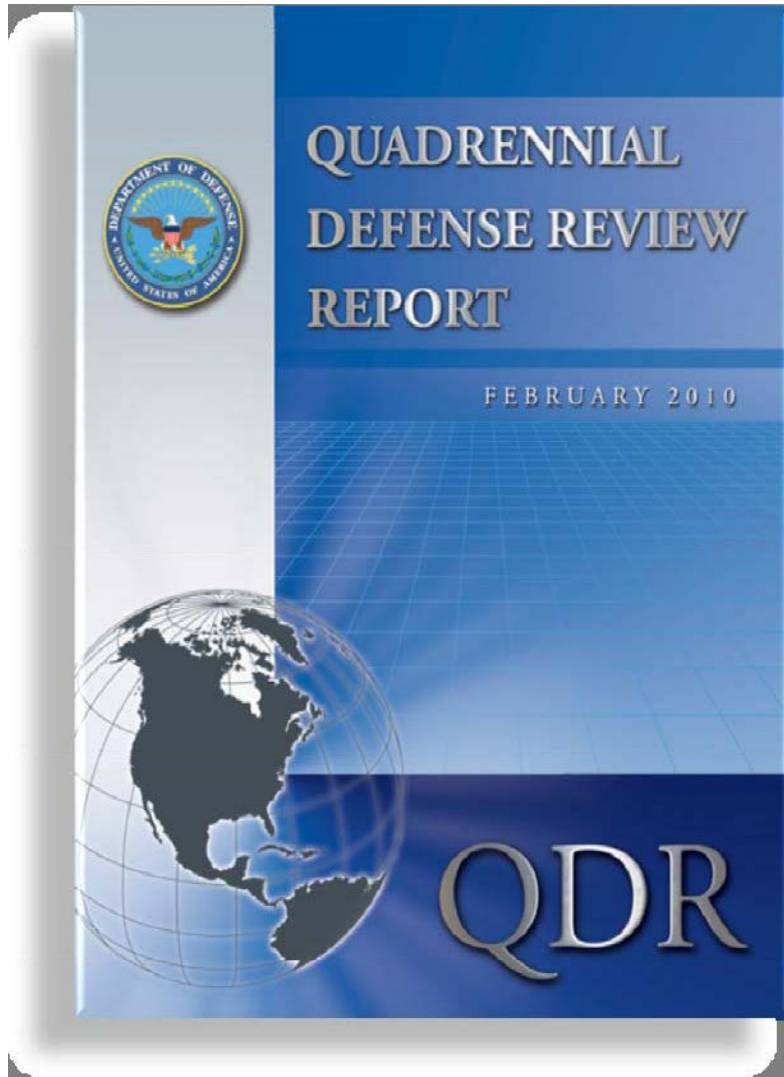
# Imperatives



- 1. Accelerate delivery of technical capabilities to win the current fight.**
- 2. Prepare for an uncertain future.**
- 3. Reduce the cost, acquisition time and risk of our major defense acquisition programs.**
- 4. Develop world class science, technology, engineering, and mathematics capabilities for the DoD and the Nation.**



# Quadrennial Defense Review Missions Require New Capabilities



1. **Defend the United States and Support Civil Authorities at Home**
2. **Succeed in Counterinsurgency, Stability, and Counterterrorist Operations**
3. **Build the Security Capacity of Partner States**
4. **Deter and Defeat Aggression in Anti-Access Environments**
5. **Prevent Proliferation and Counter Weapons of Mass Destruction**
6. **Operate Effectively in Cyberspace.**



# Capability Priorities for FY13-17



## Complex Threats

**Electronic Warfare /  
Electronic Protection**

**Cyber Science and  
Technology**

**Counter Weapons of  
Mass Destruction**

## Force Multipliers

**Data-to-Decisions**

**Autonomy**

**Engineered Resilient  
Systems**

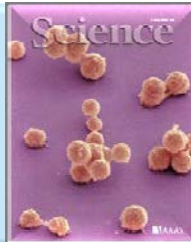
**Human Systems**



# High Interest Basic Science Areas



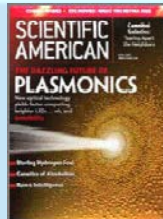
**Synthetic Biology**



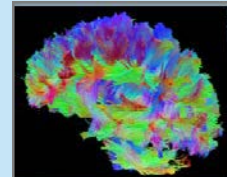
**Human Behavior Modeling**



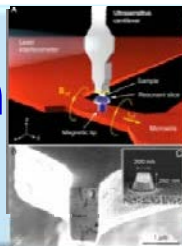
**Novel Engineered Materials**



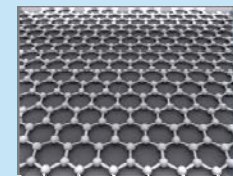
**Cognitive Neuroscience**



**Quantum Information Science**



**Nanoscience**





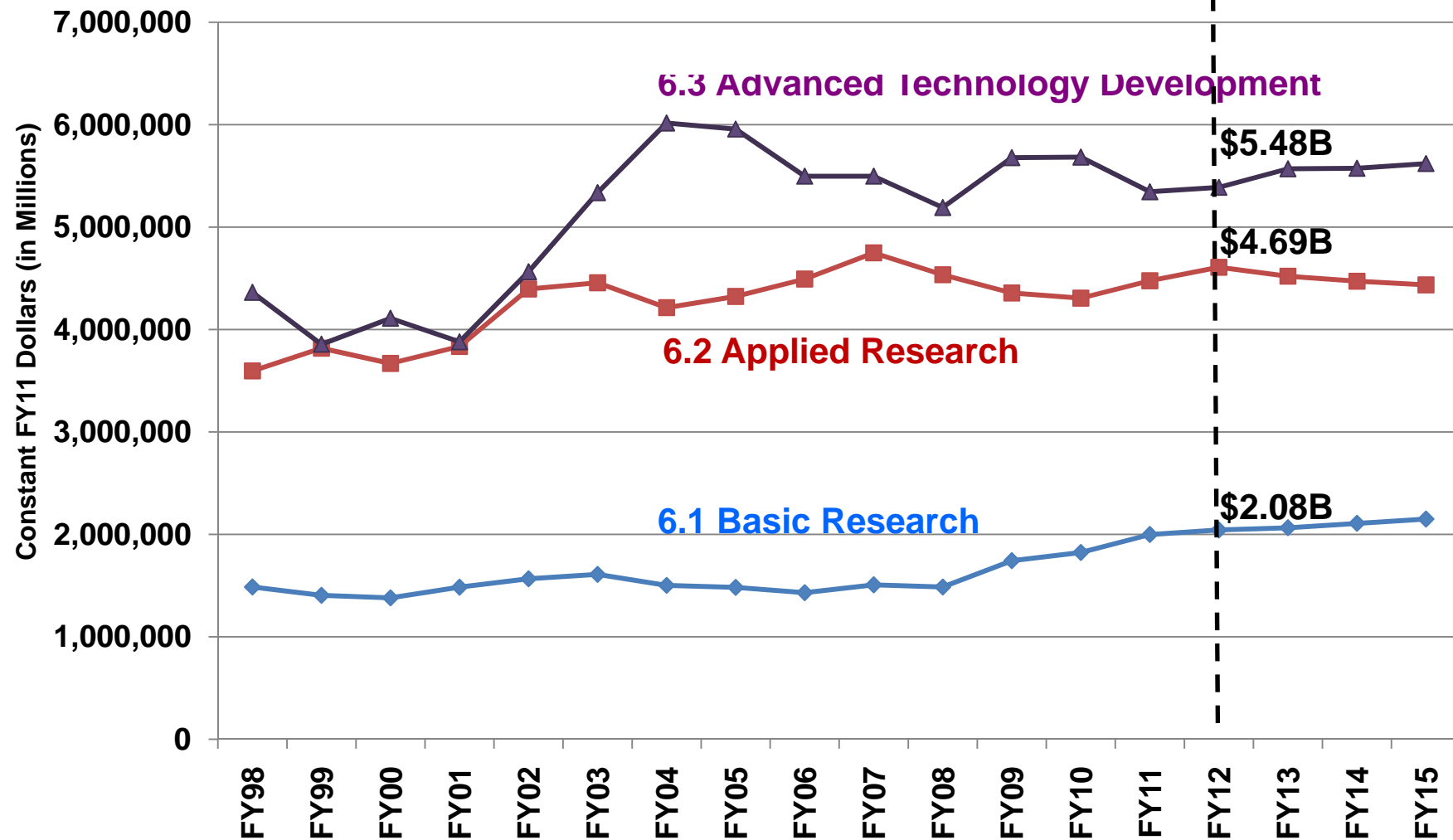


# DoD S&T Funding By Budget Activity



- President's Budget Requests - in Constant FY11 Dollars -

Total FY12 S&T request = \$12.25B





# Integrated S&T Enterprise

## Missions

- National Defense Strategy
- Quadrennial Defense Review
- Space Posture Review
- Nuclear Posture Review

Objective Architectures

## Operational Challenge

JUONs, UONs, COCOM  
IPL

Critical Capabilities

Enabling Technologies

Laboratory Program

Basic Research Program

STEM Program

Industry IR&D



# S&T Executive Committee (EXCOM)



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# Conference Summary



- **FY2012 President's Budget Request**
- **ASD(R&E) Programs**
  - Basic Research
  - Rapid Fielding
  - Test & Evaluation
  - Trusted Foundry
- **Department S&T Emphasis Areas**
- **Components' S&T Program Overviews**
- **Combatant Command Briefs**